

REMARKS

Claims 26-48 have been rejected under 35 U.S.C. § 112 for indefiniteness as the term "compound" allegedly renders claims 26, 32, 39 and 46 vague and indefinite. In the amended claims, the term "material" has been substituted for "compound" as per the Examiner's suggestion. Descriptive basis for this term may be found in the specification at page 3, line 9. No new matter has been added nor has the scope or meaning of the claims been changed by this amendment.

The claims have also been amended to clarify that the formulation is surfactant-free. Descriptive basis for this amendment may be found at page 2, line 2.

Claims 26-28, 39-42 and 46-48 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Eskins, et al. (US 5,676,994) in view of Macaulay (US 6,362,146). As previously stated, Eskins teaches a non-separable starch-oil composition useful for food, agriculture, or pharmaceutical and cosmetic carriers or vehicles. Eskins describes several examples of such formulations, including hand and body lotions and creams, sun tan lotions, vitamins, antibiotics, etc. However, Eskins fails to recognize the advantage of reducing skin irritation of the hydrophobic substances, such as sunscreen actives described by Applicant on page 5, lines 11-15. Eskins fails to recognize the surprising advantage found by Applicant for using the technology to encapsulate known irritants, such as sun screen actives. The examples given in Eskins involve substances that are effective only on penetration of the skin. Applicants have found that known irritants, which are effective without skin penetration, and which could be irritants if skin penetration occurs, can have a reduced level of skin penetration and irritation by starch encapsulation as described. One of skill in the art would recognize that the sun tan lotions described by Eskins are meant to penetrate into the skin in order to be effective, while the sun-screen actives claimed by Applicants are meant to remain on the skin surface. One of skill in the art would not be motivated by a teaching of skin-penetrating personal care products to practice Applicants' claimed sun screen active composition.

Macaulay does not remedy this deficiency as it teaches sunscreens that are encapsulated in waxes and oils. Applicant has found that sunscreen actives encapsulated in starch as claimed do not feel greasy or oily, and do not have visible residues. The starch encapsulate provides a smooth after-feel, with a soft or silky feel. (page 5, lines 16-19). While the Macauley reference teaches that sun-screen actives, which are known irritants, can be encapsulated in wax, which gives an oily feel and leaves a residue,

Applicants have found that the sun-screen actives can be starch encapsulated to form a stable, aqueous formulation. One in the art would not be motivated by encapsulation in wax, which leaves a residue, to practice Applicant's claim of starch encapsulation. The Eskins' reference, in combination with the Macauley reference fail to teach or suggest all of Applicants claim limitations, therefore, fail to present a *prima facie* case of obviousness.

The Examiner was not persuaded because the argument is not commensurate with the scope of the claims which are drawn to compositions. Applicants respectfully disagree as the claims are drawn to compositions which comprise a sun-screen active agent. Thus, the argument that one skilled in the art would not substitute sun-screen active agents which are known irritants for skin-penetrating agents disclosed by Eskins is commensurate with the sunscreen active agent limited claims.

Claims 29-31 and 43-45 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Eskins, et al. (US 5,676,994) in view of Macaulay (US 6,362,146) and further in view of Ashley ("Sunburn and Sunscreen Preparations", Poucher's Perfumes, Cosmetics and Soaps). As described above, the combination of Eskins and Macaulay does not obviate the presently claimed compositions comprising sunscreen active agents. Ashley is cited as a secondary reference to teach the water content in cosmetic compositions and does not remedy the deficiencies of the primary references. Ashley describes oil/water and water/oil emulsions in the form of creams and lotions. These compositions require emulsifiers or surfactants for particle stability. Personal care formulations of the present invention do not require the surfactants that can result in irritation and allergic reactions (page 5, lines 6-10).

There is no teaching or suggestion in the Ashley reference to any starch encapsulation of a sunscreen active, and thus the Ashley reference fails to heal the defects in the Eskins and Macauley reference to teach or suggest all of Applicants claim limitations. Further, the claims as amended are directed to surfactant-free formulations.

Claims 32-38 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Eskins, et al. (US 5,676,994) in view of Van Soest (US 6,340,527) and Fletcher, et al. (US 6,261,543). The deficiencies of Eskins are detailed above. Further, Eskins fails to teach or suggest the use of a cationic starch. As described by Applicant on page 5, line 29 to page 6 line 3, "Hydrophobic compounds encapsulated with a cationically modified starch advantageously adhere to anionic substrates such

as hair and skin. This increases the amount of contact between the hydrophobic compound and skin or hair, which aids in rinse-off and rub-off protection."

The Examiner uses the Van Soest reference to remedy this deficiency. Van Soest describes microparticles that contain an active ingredient in a starch shell, stating that any granular starch can be used and listing numerous suitable derivatives, including carboxy starch, phosphated starch, carboxyalkylated starch, sulphated starch, phosphated starch, cationic starch, and the like. The starch particles can be used in cosmetic applications. While cationic starches are listed in a laundry list of possible starches, there is no recognition that a cationic starch is a result-effective variable, and therefore such variable cannot be optimized by routine experimentation. There is also no motivation to use the emulsion method described in the Van Soest reference to produce starch-encapsulated hydrophobic compounds that are non-separable in a personal care or cosmetic aqueous formulation. Indeed, the Van Soest reference is focused on forming particles, while the Eskins reference demonstrates that starch-encapsulated particles formed by the emulsion process of the Van Soest reference do not form stable, aqueous formulation. There is no motivation to combine these references, and specifically choose a cationic starch, due to its inherent attraction to skin and hair, as recognized by Applicant. Further, Van Soest uses surfactants to promote formation of the emulsion and the presently claimed invention is surfactant-free.

The Examiner disagrees. However, it is not simply "four or five different types of starch" which are listed, but substantially all starch derivatives which meet the granular retention preference of the Van Soest invention. Van Soest treats all these starches equally, despite their widely varying functionality and no suggestion is given to choose the cationic starches for a personal care application.

The Fletcher reference is a secondary reference cited to show the use of a cationically-modified starch in an anti-perspirant. The Fletcher reference does not disclose an aqueous formulation. The Fletcher reference fails to disclose a starch-encapsulated hydrophobic compound, or a stable aqueous personal care or cosmetic formulation, and therefore fails to correct the deficiencies of the other cited references. Fletcher also uses a surfactant. Thus, Fletcher does not remedy the deficiencies of Eskins and does not obviate the present invention in view of the primary references.

Claims 36-38 have been rejected as being unpatentable over Eskins, et al. (US 5,676,994) in view of Van Soest (US 6,340,527) and in further view of Ashley ("Sunburn and Sunscreen Preparations", Poucher's Perfumes, Cosmetics and Soaps). The deficiencies of Eskins have been detailed above. The Ashley reference is cited as a secondary reference to teach the water content in cosmetic compositions. The reference describes oil/water and water/oil emulsions in the form of creams and lotions. These compositions require emulsifiers or surfactants for particle stability. Personal care formulations of the present invention do not require the surfactants that can result in irritation and allergic reactions (page 5, lines 6-10). There is no teaching or suggestion in the Ashley reference to any starch encapsulation of a sunscreen active, and thus the Ashley reference fails to heal the defects in the Eskins and Van Soest references to teach or suggest all of Applicants claim limitations.

In view of the foregoing, Applicant submits the Application is now in condition for allowance and respectfully requests early notice to that effect.

Respectfully submitted,



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